

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT APPLICATION

5    Entitled :    A METHOD AND APPARATUS FOR DETECTING AND  
                 LOCATING NOISE SOURCES NOT CORRELATED

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ABSTRACT OF THE DISCLOSURE

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          According to the invention, the method of detecting  
and locating sources of noise each emitting respective  
signals  $S_j$  with  $j = 1$  to  $M$ , detection being performed  
20    using sensors each delivering a respective time-varying  
electrical signal  $s_i$  with  $i$  varying from 1 to  $N$ , consists  
in taking the time-varying electrical signals delivered  
by the sensors, each signal  $s_i(t)$  delivered by a sensor  
being the sum of the signals  $S_j$  emitted by the noise  
25    sources, in amplifying and filtering the time-varying  
electrical signals as taken, in digitizing the electrical  
signals, in calculating the functional

$$f(\mathbf{n}_1, \dots, \mathbf{n}_j, \dots, \mathbf{n}_N) = \sum_{k \neq j} R_{k1}$$

          with coefficients  $R_{k1}$  being a function of the vectors  $\mathbf{n}_j$   
30    giving the directions of the noise sources, and in  
minimizing the functional  $f$  in such a manner as to  
determine the directions  $\mathbf{n}_j$  of the noise sources.